45Drives
BIG. STRONG. FAST.

Data Storage

Products and
Services Brochure

What Makes **45Drives** Different?

New Enterprise Business Model: Enterprise reliability, capacity, and service, but with unheard of freedom, flexibility, and cost control. All under a single point of vendor accountability.

45Drives has developed its new enterprise business model, which delivers enterprise-level capability, reliability, and service, but without vendor lock-in and its negative impacts. The evolution of the open-source software development model brought a collective intelligence to bear on the challenges of enterprise storage software. As it has matured, it has become capable of delivering performance and reliability that meets or exceeds what the legacy vendors provide. Our new enterprise model leverages open-source software with our big, strong, fast hardware and expertise to deliver a whole new experience where you are well looked after, but in control.

ENTERPRISE SOLUTIONS INCLUDE:

HIGH CAPACITY, SPEED, AND FUNCTIONALITY

MATURE DESIGN AND PROVEN RELIABILITY

VENDOR ACCOUNTABILITY

FULL SOLUTIONS WITH HARDWARE, SOFTWARE, AND SERVICE

Products

STORINATOR

45Drives' big, strong, fast single servers from 4 drive bays to 77, with capacities in excess of 1 Petabyte. Available in mechanical, hybrid, or all-SSD, with options for SATA, SAS, and NVMe, to best match your workload. Available as fully-supported, hardware-only, or anything in between.

Storinator – HDD

The Storinator is the premier solution for bulk storage using HDDs. The Storinator provides high-throughput, incredible density and the most cost effective, turnkey data-storage solution on the market.

Key features

Max Theoretical throughput = 15660 MB/s

Max Theoretical IOP/s @4k = 26400/10200 write/read (20TB HDDs)*

- Top-loading 4U Chassis
- From 4-60 Drive bays
- Tool-less drive loading and replacement
- Expandable memory up to 512 GB (64 GB x 8)

- Software-defined Storage
- Hardware RAID Option
- AMD or Intel Processor options
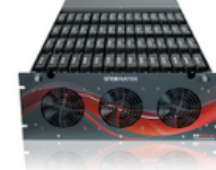
Mi4
4 HDD Bays

C8
8 HDD Bays

AV15
15 HDD Bays

Q30
30 HDD Bays

S45
45 HDD Bays

XL60
60 HDD Bays

Products

STORINATOR HYBRID – HDD & SSD

The Storinator hybrid is perfect for workloads with latency requirements that can't be handled by HDDs alone. The Storinator hybrid combines SSDs and HDDs into a single system to increase performance while keeping bulk storage costs down.

Key features

HDD Array:
Max Theoretical Throughput = 11745 MB/s
Max Theoretical IOP/s @4k = 19800 MB/s

SSD Array:
Max Theoretical Throughput = 17280 MB/s
Max Theoretical IOP/s @4k = 240 000 @4k IOPS

- Top-loading 4U Chassis
- Up to 45 Hard Drive Bays & 32 Solid State Drive Bays
- Tool-less drive loading and replacement
- Expandable memory up to 512 GB (64 GB x 8)

- Software-defined Storage
- Hardware RAID Option
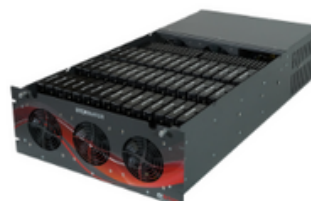- AMD or Intel Processor options

F8X1
12 HHD - 8SSD bays

F8X2
24 HDD - 16 SSD bays

F8X3
36 HDD - 24 SSD bays

XL60H32
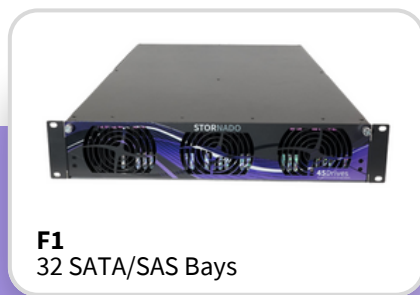45 HDD - 32 SSD bays
52 HDD - 16 SSD bays

Products

STORNADO SSD - SATA, SAS, NVMe

The Stornado offers the ultimate in low-latency performance. The Stornado is the densest SSD-based storage system on the market so you can have redundancy with maximum I/O and throughput. Available for SATA/SAS drives with the F1, or NVMe/SATA/SAS/ in the F2.

Key features (Stornado F2):

Tested Throughput up to = 55GB/s read/write

Tested random IOP/s @4k = 8 million read + 8.7million write

- 32 bay U.3 7mm slots
- UniversalBackplaneManagement (UBM)
- Tri-mode backplane. Accepts NVMe (U.3), SATA, and SAS
- 2U chassis height
- 45Drives signature tool-less "push & pop"
- Drive insertion/removal mechanism
- Hardware RAID option
- Up to 4TB of RAM
- Up to 4TB of RAM
- Up to 100GbE dual networking ports
- Intel and AMD options

F1
32 SATA/SAS Bays

F2
32 NVMe/SATA/SAS Bays

Transform the Way you Store with **Clustering**

Clustering involves linking together multiple servers using software to form a single hardware layer. You can logically define your hardware into pools based on what makes the most sense to your users. When you need to grow, you can simply add more hardware to your cluster and scale the spaces that need additional storage.

Your data will be distributed across your hardware providing redundancy. This way, your storage is highly available, meaning even if a server goes down because of maintenance or failure, you will still have access to your data.

Clusters provide your users with a seamless experience, free from downtime, highly performant, and never limited by space. Clusters provide administrators with a stress-free time managing their storage – you will no longer need to come in after hours for maintenance or repairs.
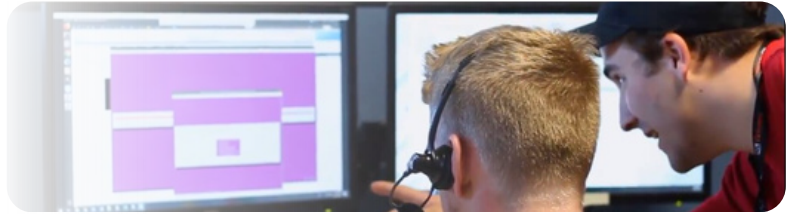
45Drives Ceph Clustering

45Drives clustering solutions are powered by Ceph, the premier open-source clustering software. This means your clustering experience will benefit from our New Enterprise business model.

Key benefits of **Ceph Clustering**

HIGHLY AVAILABLE

Ceph can achieve high levels of availability by eliminating single points of failure. Highly-available storage turns server failure into a non-event.

INFINITELY SCALABLE

Ceph can future proof your storage by increasing capacity and performance as you add more resources. Ceph prevents server sprawl due to storing everything on a single system.

AUTOMATICALLY BALANCE AND SELF-HEAL

Ceph will balance and repair your data so it stays in top working order without requiring administrator input.

OPEN SOURCE

Ceph is a product of open, collaborative development which created the most robust clustering software on the market. And it is completely free from licensing fees. Ceph is at a critical mass of users and will continue to be developed well into the future.

45Drives **Support**

All solutions 45Drives provides are backed by our industry-leading support team. Our goal is to ensure there is always a real human who is easily reachable to help you with any problem you face. At any stage of your storage project, from initial conception, through deployment and maintenance, we are here to help guide you through your journey.

45Drives is a single point of vendor accountability for your storage, providing complete solution support for hardware and software. We do not point the finger at other vendors; instead, work together and prioritize solving your problems.

KEY 45DRIVES SUPPORT SERVICES

Configuration	Emergency Service	Training
Application Support	Hardware Warranty	Integration
	Consultation	

Software

Houston UI

HOUSTON
COMMAND CENTER
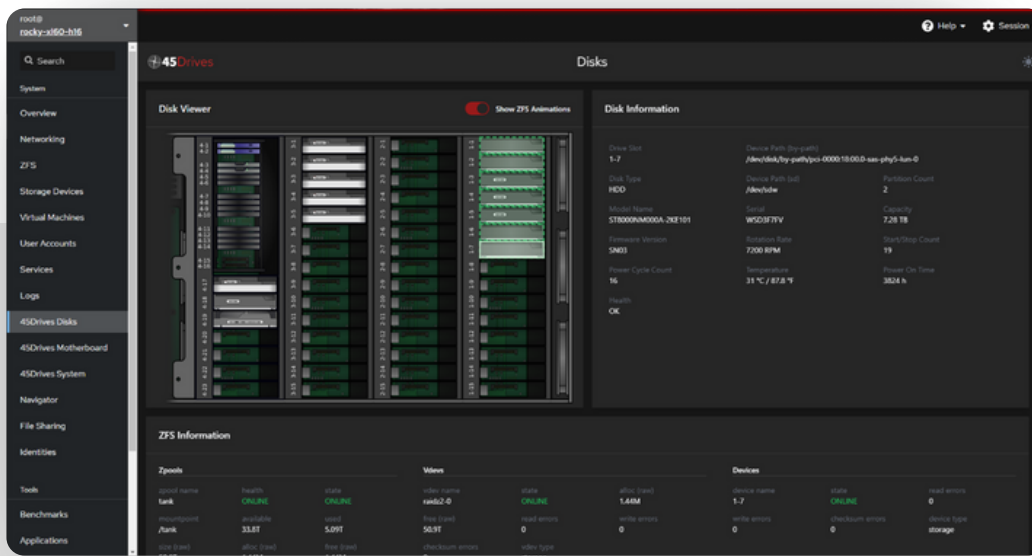
Houston is a web-based management layer developed by 45Drives, built on the open-source Cockpit Project. Houston lets you easily configure and manage pools, shares, snapshots, and more – all behind an intuitive user interface. Houston gives you a live, dynamic view into your servers, allowing you to see which drive slots are used or failed, how your motherboard is laid out, and more. Houston makes server management simple and straightforward, without needing to go into the command line (though it's there if you want it!)

HARDWARE MODULE FOR 45DRIVES SERVERS

The hardware module of Houston contains 45Drives Disks, Motherboard and System. These give you live views into different sections of your Storinator. You can see how many drives are in what slots, their status, and what pools to which they are members. The Motherboard tab gives you a view into each of your components, their temperature and more. This means you always have the information you need at a glance.

SnapSheild

SnapShield 'ransomware activated fuse' is behavioral analysis software that monitors traffic to your server for ransomware content. When ransomware is detected, SnapShield pops the infected clients' connection to your server while it is business as usual for the rest of your organization. SnapShield allows you to restore only the few files that were infected by using a web-based management interface.

WHEN RANSOMWARE STRIKES, KEEP YOUR DATA SAFE

Endpoint protection alone isn't enough to protect yourself from ransomware. Server-side protection is a necessary portion of your cybersecurity plan. The status quo is not enough to keep your data safe. SnapShield is your final layer of protection.

KEY FACTORS

- SnapShield can be installed on 45Drives servers that run ZFS or Ceph with Windows file sharing.
- Operates through a graphical user interface.
- Does not require agents on clients
- Provides an additional layer of security so you can sleep easier.
- Negligible performance degradation

Software

WHAT IS VIRTUALIZATION?

Virtualization is away to "software define" your infrastructure, moving administration of all the necessary elements: storage, computing and networking, into a single easily managed platform. It separates the physical hardware you are running from your software with a layer of abstraction. Virtualization offers greater flexibility in management and operation compared with bare metal.

WHAT IS PROXMOX?

Proxmox is a complete, enterprise, open-source virtualization environment built on Linux. Proxmox offers all the function of legacy virtualization platforms without the heafty prices, restrictions and license fees.

45DRIVES SOLUTIONS POWERED BY PROXMOX

45Drives is your ideal partner for Proxmox solutions, providing hardware, software and full service/support. You will receive the virtualization front-end hardware with back-end storage from a single vendor.

KEY FACTORS

- Powerful alternative to legacy proprietary virtual environments
- Open source development model
- Direct integration into 45Drives storage systems - ZFS and Ceph
- Maximize your hardware
- 45Drives enterprise support
- Easily managed via a web-based interface

USE CASES

- Consolidate your hardware and management by running multiple applications on the same system
- Replace current virtualization stack
- Fast backups and restoration compared to non-virtualized servers

45Drives

Contact us to discuss your storage.

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